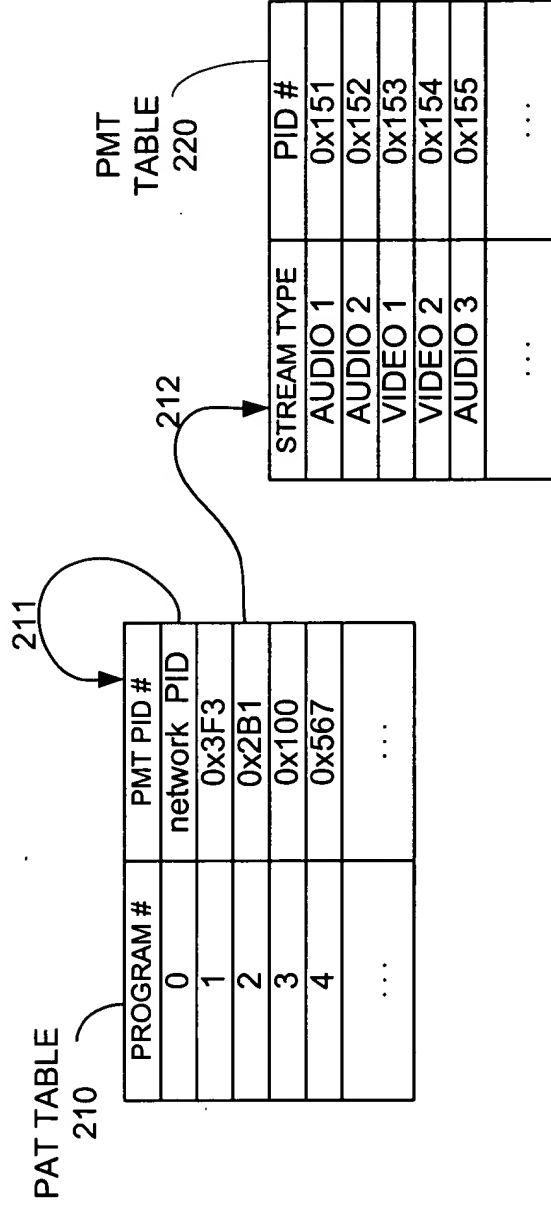


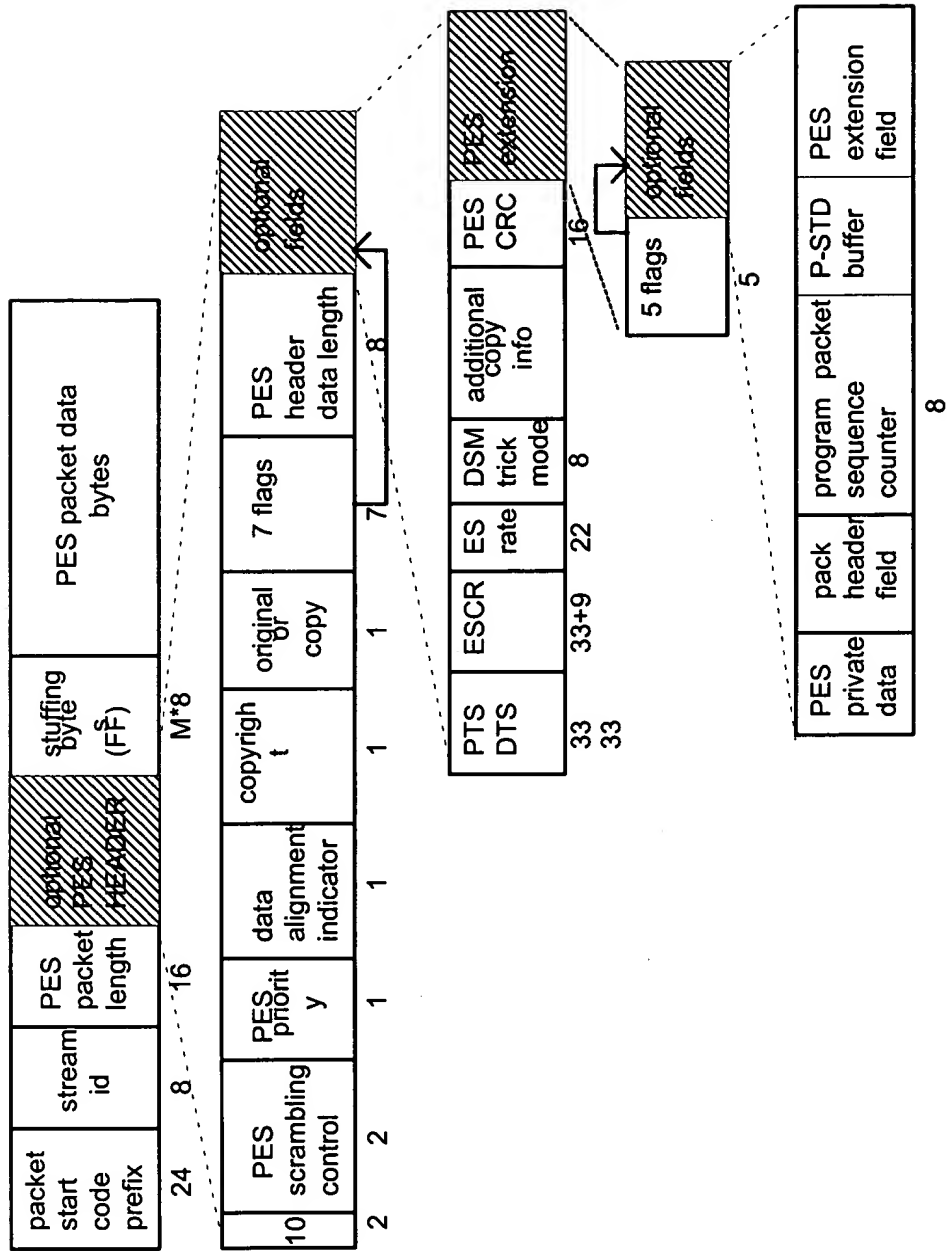
--PRIOR ART--

FIG. 1



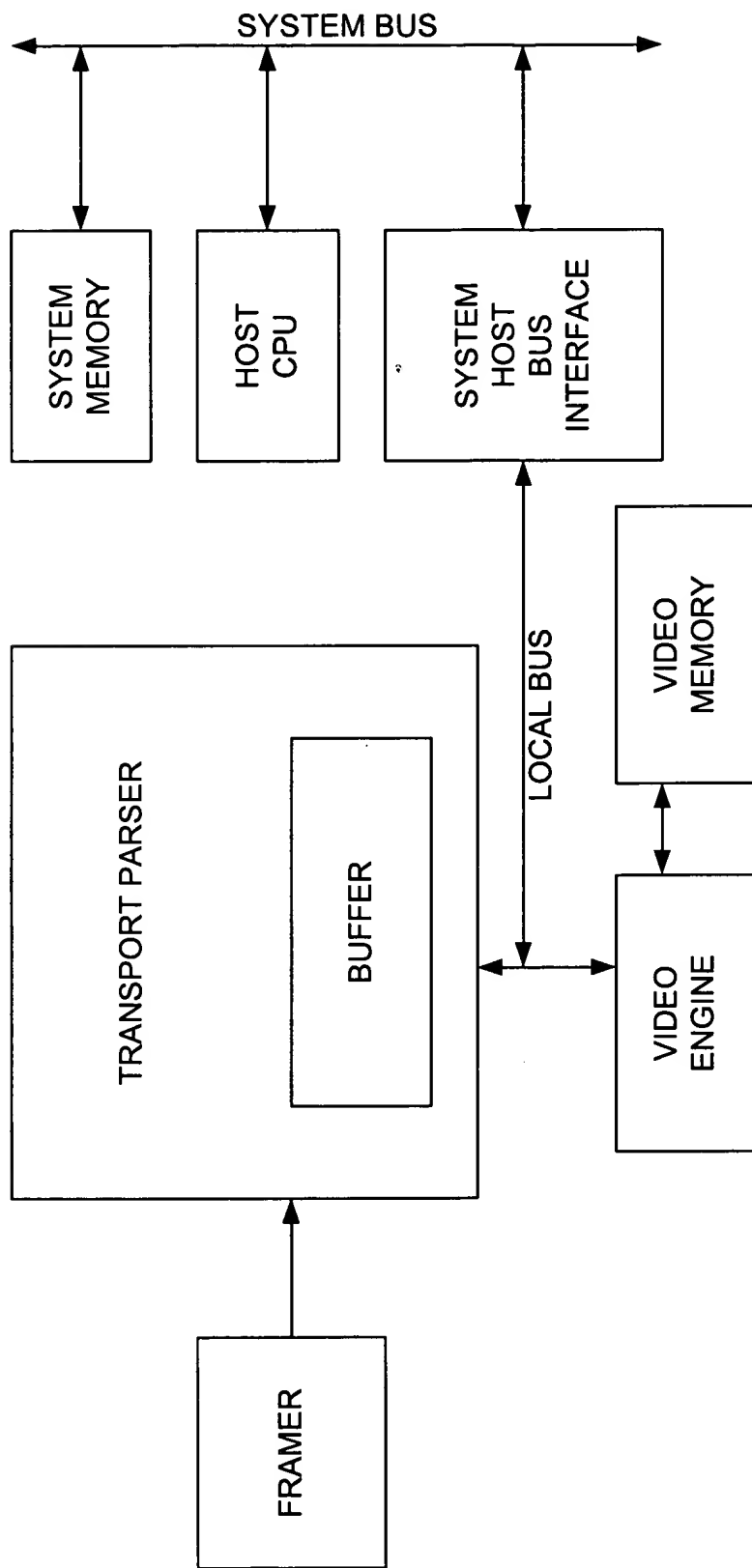
--PRIOR ART--

FIG. 2

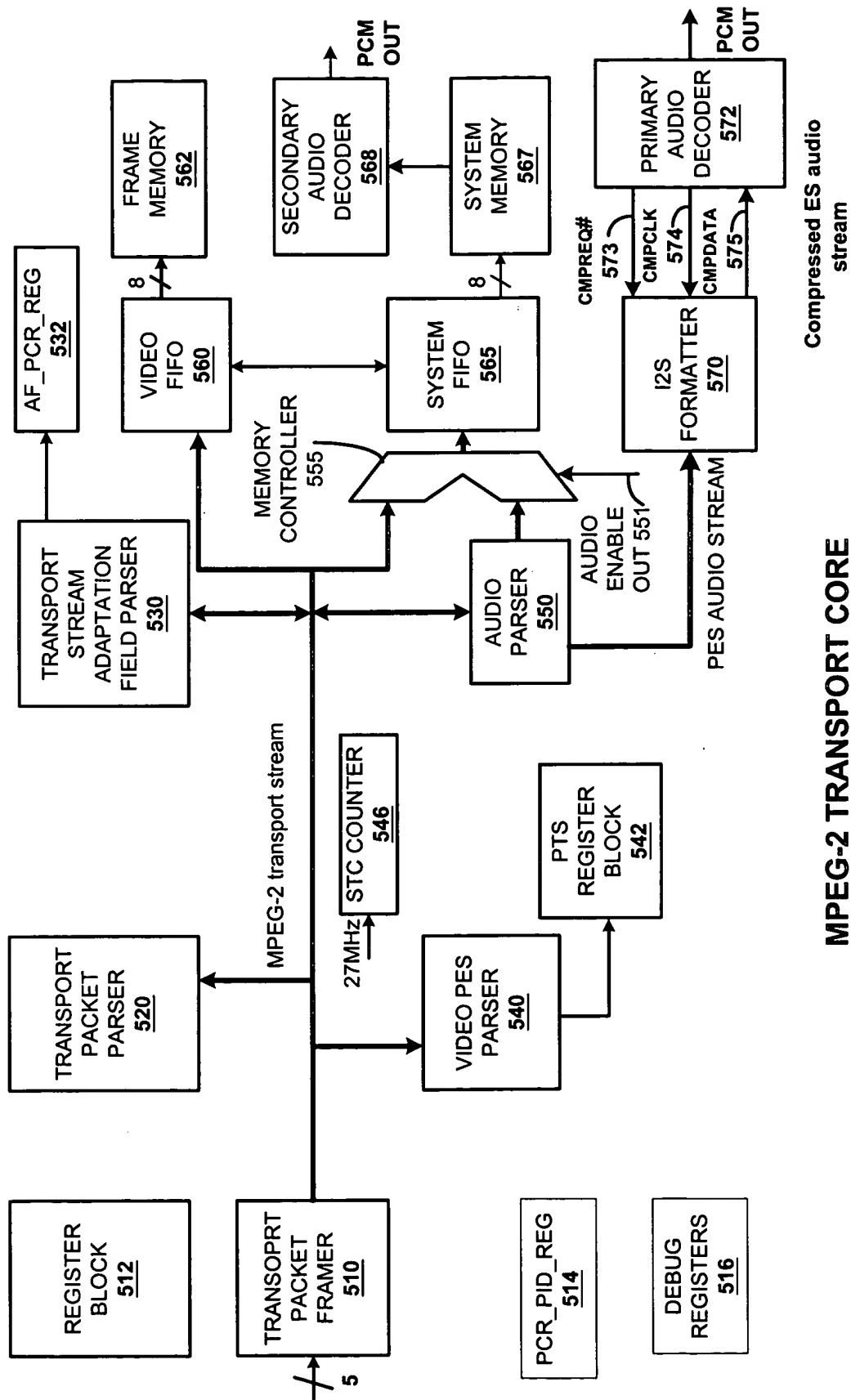


--PRIOR ART--

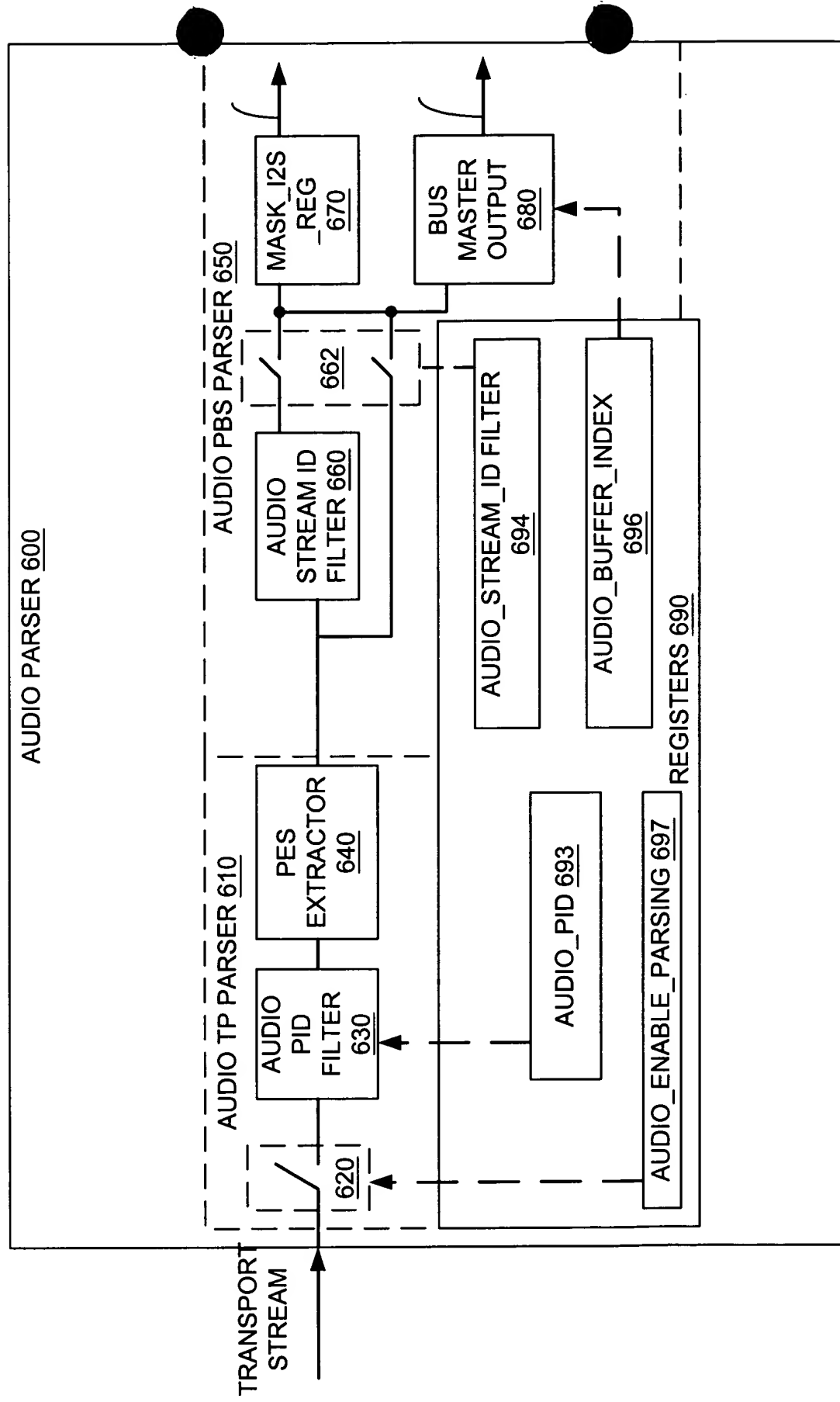
FIG. 3



-- PRIOR ART --  
FIG. 4



**MPEG-2 TRANSPORT CORE**  
**FIG. 5**

**FIG. 6**

TD TP HEADER [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
TPH4	7:0	0x00	Set to 0 at the start of the transport packet. Set to the fourth byte value after the fourth byte of the transport packet header is parsed.
TPH3	15:8	0x00	Set to 0 at the start of the transport packet. Set to the third byte value after the third byte of the transport packet header is parsed.
TPH2	23:16	0x00	Set to 0 at the start of the transport packet. Set to the second byte value after the second byte of the transport packet header is parsed.
TPH1	31:24	0x00	Set to 0 at the start of the transport packet. Set to packet start code (0x47) after the first byte of the transport packet header is parsed.
TD AF [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
AF_LEN	7:0	0x0	Set to 0 at the start of new transport packet, then to the length of the currently parsed adaptation field, i.e. adaptation field length syntax element.
AF_FLAGS	15:8	0x0	Set to 0 at the start of new transport packet, then to flag byte (second byte) of adaptation field.
SPLICE_COUNTDOWN	23:16	0x0	Set to 0 at the start of new transport packet, then to splice_countdown value of adaptation field.
AF_PRIVATE_DATA_LEN	31:24	0x0	Set to 0 at the start of new transport packet, then to private_data_length value of adaptation field.
TD AF EXT [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
AF_EXT_LEN	7:0	0x00	Set to 0 at the start of new transport packet, then to the length of extension data of adaptation field.
(reserved)	31:8	0	Unused bit-field, always set to 0.
TD PES [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
PES_STREAM_ID	7:0	0x0	Set to zero when payload_unit_start_indicator is found as '1', then set to stream_id value extracted from the PES header. 0xE0 – 0xEF for video PES parser, 0xC0 – 0xDF for audio PES parser.
PES_FLAGS_B7	15:8	0x0	Set to zero when payload_unit_start_indicator is found as '1', then to byte 7 (flags) of PES header.
PES_FLAGS_B8	23:16	0x0	Set to zero when payload_unit_start_indicator is found as '1', then to byte 8 (flags) of PES header.
PES_HEADER_DATA_LEN	31:24	0x0	Set to zero when payload_unit_start_indicator is found as '1', then to the value of extracted PES header length of the current PES header.
TD PES EXT [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
PES_EXT_FLAGS	7:0	0x00	Set to zero when payload_unit_start_indicator is found as '1', then to the value of extracted flags from the extension of the current PES header.
PACK_FIELD_LEN	15:8	0x00	Set to zero when payload_unit_start_indicator is found as '1', then to the pack length.
PES_EXT_FIELD_LEN	23:16	0x00	Set to zero when payload_unit_start_indicator is found as '1', then to the length of the PES packet extension data bit-field.
(reserved)	31:24	0x00	Unused bit-field, reads as 0.

FIG. 7

TD_PEEK [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
TP_PARSED	0	'0'	Set to '0' after the current TP packet is parsed. Set to '1' after transport packet header is parsed.
AF_PARSED	1	'0'	Set to '0' after the current TP packet is parsed. Set to '1' after adaptation field is parsed.
PES_PARSED	2	'0'	Set to '0' after payload_unit_start_indicator is '1' Set to '1' after PES packet is parsed.
TP_STATUS	5:3	'000'	Current status of the transport packet parser: this 3 bit field codes the status of the latest parsed transport packet (TP):  '000' – No error '001' – Scrambled TP '010' – Illegal AF flag '011' – Duplicate TP '100' – Illegal AF payload length '101' – Illegal AF private data length.  In case of error, current transport packet is dropped.
PES_HDR_STATUS	8:6	'000'	Current status of the PES packet parser:  '000' – No error. '001' – Video / audio stream_id mismatch. '010' – Non-video / audio stream_id. '011' – Syntax error on 2 MS bits of PES byte 6 '100' – Scrambled PES packet
DROP_TP_IF_SCRAMBLED (R)	9	'0'	Status bit: set to '1' if parser is configured to drop scrambled transport packet AND current packet is scrambled, otherwise status is set to zero.
DROP_PES_IF_SCRAMBLED (R)	10	'1'	Status bit: set to '1' if parser is configured to drop scrambled PES packet AND current PES packet is scrambled, otherwise status is set to zero.
IGNORE_PES_HDR_ERROR (R)	11	'0'	Status bit: set to '1' if parser is configured to ignore errors on the PES header AND current PES header has errors, otherwise status is '0'.
(reserved)	31:12	0x00000	Unused bit-field, always set to zero.

FIG. 8



TD PCR PID CNTRL [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
PCR_PID	12:0	0x1FFF	PID value of the transport packet used to extract stream time (samples of the reference program clock).
FORCE_PCR_LOAD	13	'0'	Control of the PCR loading process: 0=Do not load next PCR sample to the STC cnt.; 1=Load next PCR sample to the STC counter
ROUTE_PCR_PACKET	14	0x0	PCR packet routing control: 0=Execute a PCR process instead; 1=Route packet with PCR PID different than a video or audio PID to the memory queue.
(reserved)	31:15	0	Reserved bit-field, always set to 0.

FIG. 9

TD SM [CNTRL] [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
RST AT EVERY PES SCP	0	0x0	<No Description>
AF PRVT ZERO CMP	5:1	0x4	<No Description>
VIDEO_AUDIO_SWITCH	6	'0'	If set to '0' allows monitoring of video parser. If set to '1' allows monitoring of audio parser.
(reserved)	31:6	0x000	Unused bit-field, always set to zero.

TD SM [R] 32 bits (access: 32)			
Field Name	Bits	Default	Description
FRAMER_STATE	2:0	'000'	States of the transport packet framer: 0=FRAME_BYTE; 1=SYNC_SEARCH; 2=SYNC_LOST; 3=SYNC_VERIFY; 4=SYNC_LOCK
TPHP_STATE	6:3	'0000'	States of the transport packet header parser: 0=IDLE; 1=TPHDR0; 2=TPHDR1; 3=TPHDR2; 4=TPHDR3; 5=VIDEO_AF 6=VIDEO_PES; 7=AF_PCR_ONLY; 8=AF_PCR_ROUTE; 9=FULL_PACKET_ROUTE
AFP_STATE	10:7	'0000'	States of the adaptation field parser: 0=IDLE; 1=AF_LEN_EXTRACT; 2=AF_FLAGS_EXTRACT; 3=PCR_EXTRACT; 4=OPCR_SKIP; 5=SPLICE_CNTDOWN_EXTRACT; 6=PRIVATE_DATA_LEN_EXTRACT; 7=PRIVATE_DATA_EXTRACT; 8=AF_EXT_LEN_EXTRACT; 9=AF_EXT_SKIP; 10=STUFFING_SKIP
PESP_STATE	15:11	'00000'	States of the PES parser: 0=IDLE; 1=PESHDR0; 2=PESHDR1; 3=PESHDR2; 4=PESHDR3; 5=PESHDR4; 6=PESHDR5; 7=PESHDR6; 8=PESHDR7; 9=PESHDR8; 10=PTSPTS_EXTRACT; 11=ESCR_EXTRACT; 12=ESRATE_EXTRACT; 13=DSM_EXTRACT; 14=ADDCOPY_EXTRACT; 15=PES_CRC_EXTRACT; 16=PES_EXT_EXTRACT; 17=PES_PRIVATE_DATA_EXTRACT; 18=PACK_HEADER_FIELD_EXTRACT; 19=PACK_HEADER_SKIP; 20=PPSC_EXTRACT; 21=PSTD_BUFFER_EXTRACT; 22=PES_EXT2_EXTRACT; 23=PES_EXT2_SKIP; 24=STUFFING_EXTRACT; 25=PAYLOAD_EXTRACT
CC_STATE	18:16	'000'	States of continuity counter verifier on non-PCR PID: 0=CC_IDLE; 1=CC_COMP; 2=CC_LOAD; 3=CC_INC 4=CC_AF_LEN; 5=CC_DSCNT_IND
PCRCC_STATE	21:19	'000'	States of continuity counter verifier on PCR PID. 0=PCRCC_IDLE; 1=PCRCC_COMP; 2=PCRCC_LOAD; 3=PCRCC_INC; 4=PCRCC_AF_LEN; 5=PCRCC_DSCNT_IND
(reserved)	31:22		Unused bit-field, always set to zero.

FIG. 10

TD AUDIO_PID_CNTRL [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
AUDIO_PID	12:0	0x1FFF	Packet_id (PID) value of the transport packet containing audio stream.
AUDIO_ENABLE_PARSING	13	'0'	Set to '1' to enable audio parsing system. Set to '0' to disable audio parsing from the next transport packet.
AUDIO_BUFFER_INDEX	20:14	'000000'	One out of sixty four buffers in the system memory where audio data can be routed while it is simultaneously routed to external hardware audio decoder.
AUDIO_START_FROM_PACKET	21	'0'	If set to 0, audio parsing starts from the current transport packet. If set to '1' audio parsing starts from the transport packet where payload unit start indicator is set to '1';
AUDIO_PROCESS_STREAM_ID	22	'0'	If set to 0, filter on stream_id is switched off. If set to 1, filter on stream_id is enabled. Audio PES packet is dropped if its stream_id is outside of 0xC0 – 0xDF range or if it is not set to private stream 2 value.
AUDIO_STREAM_ID	30:23	0xC00	Audio stream_id value to filter upon.
IGNORE_AUDIO_TEI	31	0x0	If set to '1' audio transport packet parser will ignore all error flagged transport packets, i.e. audio packets with TEI bit set to '1'.
TD AUDIO_PID_CNTRL2 [RW] 32 bits (access: 32)			
Field Name	Bits	Default	Description
AUDIO_ENABLE_PES_OUT	0	0x0	Control of the bus-mastered audio output to the AUDIO_BUFFER_INDEX queue in the system memory. Set to '1' to enable bus mastering of audio PES packets to circular buffer in the host memory. Set to '0' to disable bus mastering of audio PES packets.
AUDIO_ENABLE_ES_OUT	1	'0'	Control of the bus-mastered audio output to the AUDIO_BUFFER_INDEX queue in the system memory. Set to '1' to enable bus mastering of audio ES packets to circular buffer in the host memory. Set to '0' to disable bus mastering of audio ES packets.
MASK_I2S_REQ	2	'0'	Control of the audio PES packet output towards external hardware audio decoder: Set to '0' to enable PES audio output to external audio decoder. Set to '0' to disable PES audio output to external audio decoder.
(reserved)	31:3		Reserved bit-field, always set to 0.

FIG. 11

GEN_INT_CNTL			
[RW] 32 bits (access: 8/16/32)			
Field Name	Bits	Default	Description
(other interrupt sources)	3:0	0x0	Other sources of interrupt
(reserved)	12:4	0	Unused bit-field, always set to zero.
I2S_FIFO_DATA_REQ_INT_EN	13	'0'	Enables / disables interrupt when request for more bit-stream data occurs from external hardware audio decoder. 0=Disable 1=Enable
(reserved)	15:14	'00'	Unused bit-field, always set to zero.
(other interrupt source)	19:16	0x0	Other source of interrupt.
(reserved)	23:20	0x0	Unused bit-field, always set to zero.
CHIP_INT_EN	25	'0'	Global interrupt enable / disable at the chip level 0=Disable ; 1=Enable
(reserved)	31:26	'000000'	Unused bit-field, always set to zero.
GEN_INT_STATUS			
[RW] 32 bits (access: 8/16/32)			
Field Name	Bits	Default	Description
(other interrupt sources)	3:0	0x0	Status of other source of interrupt.
(reserved)	7:4	0x0	Unused bit-field, always reads as zero.
(other interrupt source)	8	'0'	Status of other source of interrupt.
(reserved)	9	'0'	Unused bit-field, always reads as zero.
(other interrupt source)	10	'0'	Status of other source of interrupt.
(reserved)	12:11	'00'	Unused bit-field, always reads as zero.
I2S_FIFO_DATA_REQ_INT_AK (W)	13	'0'	Clear I2S interrupt request by setting this bit to 1. 0=No effect 1=Clear status
I2S_FIFO_DATA_REQ_INT (R)	13	'0'	I2S interrupt request status indicator. 0=No event 1=Event has occurred, interrupting if enabled.
(other interrupt source)	14	'0'	Status of other source of interrupt.
(reserved)	15	'0'	Unused bit-field, always reads as zero.
(other interrupt source)	16	'0'	Status of other source of interrupt.
(reserved)	23:20	0x0	Unused bit-field, always reads as zero.
(other interrupt sources)	25:21	'00000'	Status of other source of interrupt.
(reserved)	31:26	'000000'	Unused bit-field, always reads as zero.

FIG. 12